

Abstract

Methods and systems for the design and execution of an aerospace or aeronautic system are provided. The aerospace or aeronautic system may incorporate planetary environment models and models of equations of motion. The planetary environment models mathematically represent planetary environment specifications, such as atmosphere and wind. Atmosphere models include standard day atmosphere models and non-standard day atmosphere models, and wind models include continuous wind turbulence models and discrete wind turbulence models. The models of equations of motion include models of three-degree-of-freedom equations of motion with variable mass and models for six-degree-of-freedom equations of motion with variable mass. As a result, the present invention can design and execute a target system more accurately than the conventional system that provides only standard day planetary environment models, continuous wind turbulence models, or fixed mass equations of motion models.